CSS 2013
"CE&O" Study Group

Marge Bardeen, Fermilab
Dan Cronin-Hennessy, University of Minnesota

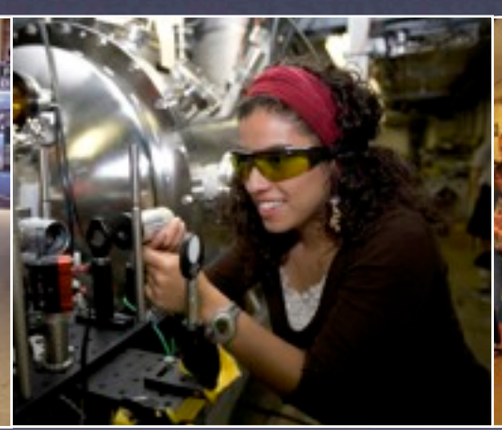
CSS 2013, Minneapolis, August 2013

CEO Study Group Charge

How to build support for & develop understanding of particle physics

- Summarize current status of particle physics CE&O programming.
- Identify promising future opportunities.

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Study Subgroups & Leaders

Policy Makers/Opinion Leaders:

General Public:

Broader Science Community:

Teachers & Students:

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Study Subgroups & Leaders

Policy Makers/Opinion Leaders:	Herman White, Katie Yurkewicz
General Public:	Michael Barnett, Kyle Cranmer
Broader Science Community:	Pushpa Bhat, Joe Lykken
Teachers & Students:	Tom Jordan, Peggy Norris
	Ken Cecire, Inga Karliner

CEO Pre-Meetings

- Gather input from the field:

March 16-17 with APS Meeting
Teachers - grades 5-16
Students - grades 5-16

April 12-13 with APS Meeting
Policy Makers & Opinion Leaders
The Science Community

Communication Education & Outreach Survey

https://www.surveymonkey.com/s/6LPCCDS

- Assess ongoing CE&O efforts:
  - Outreach lover or communication avoider
  - Student or teacher
  - Research scientist or technician
  - Faculty member or volunteer

Taken the survey? Last chance this week.

Communication, Education & Outreach Database (usparticlephysics.org)

- Assess ongoing CE&O efforts in the U.S.
- Identify opportunities to tell our story & build support.

Fourth iteration of the original database requested by NSF in 1999

New software allows *you* to update any time.

1. Build database.
2. Open public website to find activities.
3. Printable institution-specific documents

The Science of Science Communication

Arthur M. Sackler Colloquium
National Academy of Sciences
(Available on YouTube)

Communication must be a *community* effort, but how?

Coordinate internally and externally.

Work as a team:

- *Content specialists*
- *Social & decision science experts*
- *Communication experts*

Evaluate with an important, scholarly approach as a priority.

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The Science of Science Communication

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National Academy of Sciences

(Available on YouTube)

Communication must be a *community* effort, but how?

Deliver a variety of simple, clear messages, repeated often by trusted sources.

Collect audience data.

Develop trust, our most important asset:

Familiarity —> liking —> trust

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European Strategy WG 5

"Active and coordinated communication of results and the societal benefits of particle physics, as well as educational activities to increase common knowledge and interest about its fore-front scientific endeavours continue to be of utmost interest and importance for the field …

Personal engagement of scientists in outreach and communication must be recognised with equal importance as scientific research as such."

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Key Findings:
Policy Makers & Opinion Leaders

Consistent and coherent communication is critical to achieve our goals.

A dedicated (i.e., funded) national infrastructure is required to give scientists tools and training to make the case for particle physics.

A national effort is necessary to motivate supporters in industry and other fields to articulate their need for our science.

The U.S. particle physics community should work with APS to investigate the possibility of a study of the economic impact of physics research in the United States.

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Key Findings: General Public

The wide range of individual efforts are greatly enhanced by support and organization from experiments and major labs.

That support can include: websites, photos and images, brochures and printed materials, videos, social media, data analysis programs & items for exhibition settings.

Experiments and labs need to devote real resources for outreach —> they need funding from agency resources.

Key Findings:
The Broader Scientific Community

To remain strong, our field needs to build rapport and common cause with scientists in other fields.

There is a perception that we are no longer among the leading, most relevant fields of science.

Some of our projects are billion-dollar-plus, multi-decadal "Big Science" projects.

Our science involves energy/length scales far removed from those of other sciences.

To compound the perception from outside, we have internal issues. We need to develop a stronger sense of community.

Key Findings: Students (Next Generation Scientists)

Physicists help prepare undergrads who want to teach.

PhysTEC - APS program for physics teachers

Collaborations between Physics and Education (Colorado, Illinois, Maryland, Minnesota, Tufts, Washington . . .)

Illinois video about a course for elementary teachers
https://uofi.box.com/s/m8gdllql72b00xbxgb22

Working with physicists motivates high school students:

They are capable of independent, original analysis & research.

They can work with HEP data and, with help, reason as physicists do.

They can learn particle physics at their level.

Key Findings: Teachers/Faculty

Good methodology for teaching undergraduates exists.

Can we make it better known and used by particle physicists?

The Next Generation Science Standards will drive K-12 education in most states.

Can we provide opportunities for teachers to experience science —> incorporate scientific & engineering practices in their classes?

CE&O Activities/Events during CSS

Public Lecture: Saul Perlmutter - Monday, 8:00 pm

Communication Training - Thursday, 12:15 - 1:45 pm

Panel: Selling Long-Term Science - Thursday

Panel: Making Common Cause . . . - Friday

Physics Slam on Ice! - Friday, 8:00 pm

Teacher Days - Monday & Tuesday, Aug. 5, 6

Elevator Speeches - Tuesday & Wednesday

Writeboards (*Symmetry* project)

Join Our Open Discussions!
Tuesday - Saturday
Time: 12:15 - 1:45 pm
Place: Humphrey 180

Tuesday - Policy Makers & General Public
Wednesday - Faculty/Teachers & Students
Thursday - Communication Training
Friday - Open Discussion
Saturday - Inreach, Communication Across Frontiers

Stop by before you head to the colloquia in Tate Hall.